

Medical Education

The Oslerian Tradition and Changing Medical Education: A Reappraisal

JOHN P. GEYMAN, MD, *Seattle*

Although only 21 of Sir William Osler's 45 years in academic medicine were spent in US medical schools (1884 to 1905), he played a major role in shaping modern medical education in this country. The integration of scholarship with patient care, together with the science and art of medicine, was central to Osler's teaching and writing throughout his career. A classic generalist and a charismatic clinical teacher, he taught by example and was as concerned with the ideals of medicine as with its science and knowledge.

Many changes have reshaped the content, process and concerns of American medical education since Osler's time. Subspecialization and balkanization of medical education and practice have become dominant. Many of the important issues in medicine today do not fit neatly into the domain of any of the established specialties or medical organizations. There is now an urgent need to promote generalist attitudes in medicine, and the Oslerian tradition has much to offer in approaching today's problems in medical education and practice.

Sir William Osler is the prototype of the modern physician who combines the science and art of medicine in a humanistic way.¹ His influence on medicine in this country, as elsewhere in the world, over the past century has been far-reaching by even the most conservative standards. As one measure of his influence, 80 tributes to him were published in various medical journals in 1949, the centennial of his birth,² and many hundreds of articles and book materials have been published on his life and work since his death in 1919 at the age of 70.

Osler was born and educated in Canada, receiving his undergraduate medical education in Toronto and Montreal. He then did graduate work in England, Scotland, Germany and Austria, with particular emphasis on physiology and pathology. His career in academic medicine spanned 45 years from 1874 to 1919 and involved four institutions in three countries: McGill University in Montreal (1874 to 1884), University of Pennsylvania (1884 to 1889), Johns Hopkins University (1889 to 1905) and Oxford University (1905 to 1919). The 21 years spent in the United States at Philadelphia and Baltimore have had lasting effects on American medical education, though there is growing

concern by some that the Oslerian tradition is weakening amid the many changes in US medical education in recent years.³

Because of the importance of Osler's contributions to modern medicine and the extent of current flux and debate in many areas of medical education, it is useful to reassess the prevalence and applicability of the Oslerian tradition in US medical education today.

Osler's Legacy

Osler's contributions cannot be fully understood until one recognizes the deplorable state of medical education that he found in the United States on his arrival in 1884. Throughout much of the 19th century, most American physicians were trained through apprenticeship with a preceptor, as was customary in Europe at that time. Most preceptors were too busy to do much teaching, and a student learned by observation and by reading the few books that the preceptor may have had in his library. During the 19th century a large number of proprietary medical schools were established (there were 90 schools by 1880 and 151 by 1900),⁴ many in direct competition with each other. A typical medical school had a faculty of only five or six professors who

Refer to: Geyman JP: The Oslerian tradition and changing medical education: A reappraisal (Medical Education). West J Med 1983 Jun; 138:884-888
Dr Geyman is Professor and Chairman, Department of Family Medicine, University of Washington School of Medicine, Seattle.
Reprint requests to John P. Geyman, MD, Department of Family Medicine, RF-30. University of Washington, Seattle, WA 98195.

shared the teaching of nine courses—anatomy, botany, chemistry, diseases of women and children, *materia medica*, obstetrics, physiology, principles and practice of medicine and principles and practice of surgery. Most didactic teaching was by lecture during only four to six months of formal instruction. Few schools had any access to hospitals and many medical graduates had no hospital training. There were few standards and licensing laws were lax. Some states had passed licensing laws, but these merely provided automatic licensing of medical graduates. Many of the proliferating medical schools were little more than diploma mills established by local practicing physicians seeking the prestige of a teaching position and funded by student fees. The weakest medical schools therefore tended to have the largest classes.⁵

The scientific revolution ushered in major changes that required reorganization of US medical schools. For example, advances in bacteriology led to the need for teachers and laboratory facilities in chemistry, bacteriology, physiology and pathology. The inevitable result was a shift of the medical schools to universities, expansion and upgrading of curricula, reduction of class size in many instances and gradual elimination of the small proprietary schools and the apprenticeship method of teaching.⁵

Toward the end of the 19th century, state examining boards began to establish requirements for medical schools, which included an adequate number of faculty, laboratory facilities, hospital experience, three-year and finally four-year graded curricula, required anatomic dissection and admission requirements (high school graduation).⁵ On his arrival in Philadelphia, Osler found a leading medical school of its time making these changes. Adapting to this new environment, he steadily gained wide respect as an excellent clinician, a charismatic teacher (particularly at the bedside and in the clinic) and a scholar. He continued his work in both medicine and pathology and published 39 papers on various aspects of clinical medicine during his five years at the University of Pennsylvania.⁶

There is no question that Osler's greatest impact on medical education in the United States came as a result of his years in Baltimore. He was appointed Professor of Medicine at Johns Hopkins University and Physician-in-Chief at the new Johns Hopkins Hospital. Undoubtedly he was attracted by the opportunity to combine patient care, teaching and research at a well-endowed university. He was also attracted by the small classes (18 students in the first class when the new Johns Hopkins Medical School opened in 1893). His priorities in organizing the Department of Medicine there were as follows: the welfare of patients, teaching of medical students and residents and contributing to the advancement of knowledge in internal medicine.⁶

Osler was active in all three of these areas, and his enthusiasm and energy were legendary. He quickly organized his department and faculty to provide patient

care and clinical teaching in both the clinics and hospital. By the end of his third year in Baltimore (a year before the arrival of medical students), he had completed the first edition of his *Principles and Practice of Medicine*, which rapidly became the gold standard among medical texts and went through many editions in later years. Of all his achievements, however, Osler regarded his contributions to undergraduate medical education as his most important and personally valued. He at once departed from traditional didactic teaching in favor of small group teaching at the bedside and in the clinics. In his words,

How can we make the work of the student in the third and fourth year as practical as it is in the first and second? I take it for granted we all feel that it should be. The answer is, take him from the lecture-room, take him from the amphitheatre—put him in the outpatient department—put him on the wards.^{7(p38-39)}

Osler's efforts resulted in the implementation of clinical clerkships for medical students in the clinical years in very much the same form as today.

The integration of scholarship with patient care, together with the science and art of medicine, was central to Osler's teaching and writing throughout his career. His background in pathology reinforced his work as a medical scientist. His descriptions of the natural history of diseases were classic. His distrust of the inappropriate use of proprietary medicines was considered therapeutic nihilism by some—but was clinical wisdom in that most available remedies were ineffective.⁸

Osler upheld the key role of the generalist in medicine: "Have no higher ambition than to become an all-around family doctor, whose business in life is to know disease and to know how to treat it."^{7(p51)} He taught by example and was as concerned with the ideals of medicine as with its science and knowledge: "Care more particularly for the individual patient than for the special features of the disease."^{7(p93)} Further:

I have three personal ideals. One, to do the day's work well and not to bother about tomorrow—The second ideal has been to act the Golden Rule, as far as in me lay, toward my professional brethren and toward the patients committed to my care. And the third has been to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrow and grief came to meet it with the courage befitting of a man.^{7(p84)}

Osler's energies carried him into many related areas. He was a bibliophile and an avid supporter of medical libraries and of journal clubs. He was a strong advocate of professional organizations, especially of the local medical society, and of other medically related organizations for the advancement of medical care and prevention of specific diseases. During his career he published almost 1,200 papers,⁹ and was one of the first to recognize the role of bacteria in endocarditis and of syphilis in aneurysms.¹⁰ Despite the breadth of his interests, however, Osler focused on three basic concerns in teaching: (1) you are always a student, (2)

you must treat the person as well as the disease and (3) you must consider the poor beyond all others.⁶

Even in the earliest years at Johns Hopkins, Osler found himself embroiled in the same tensions that are prevalent in medical education today—the running debate and conflict between the generalist and the specialist, between the clinician and researcher. Osler represented the classic generalist clinician-teacher-scholar. Although he recognized the importance of research, he objected to placing a higher value on laboratory over clinical research. His legacy therefore includes the primacy of the patient as person as the object of medical care and medical education, the central role of the clinician-teacher-scholar in medical education and the need for physicians and medical educators to take a broader view of their work and of the relationship of medicine to society. He feared that an overemphasis on specialization in medical education would create a “class of clinicians growing up out of touch, and necessarily out of sympathy with the profession and the public.”¹¹ He was a leader willing to question tradition in medical practice and to eliminate useless procedures. For example, he championed this view about excessive prescribing of drugs:

Upon us whose work lay in the last quarter of the nineteenth century fell the great struggle with that many-headed monster Polypharmacy—not the true polypharmacy which is the skillful combination of remedies, but the giving of many—the practice of at once discharging a heavily-loaded prescription at every malady, or at every symptom of it.¹²

Osler's many achievements over a full career provide ample evidence for the importance of a generalist voice within medicine and medical education.

The Oslerian Tradition Today

Major changes have reshaped the content, process and concerns of American medical education since Osler's time. The inevitable growth of specialization during the 20th century is clearly the most important single influence on medical education. Between 1930 and today, for example, the proportion of general practitioners and family physicians has totally reversed from about 80 percent to about 20 percent of all physicians in the United States. There are now 23 specialty boards which confer at least 65 general and special certificates. Heavy emphasis since World War II on biomedical research has led to an exponential increase in biomedical knowledge, technology and extensive subspecialization within medical schools. The medical profession has become dominated by specialists practicing and teaching in progressively narrower fields. In a thoughtful paper examining the division of labor in medicine, Menke views the dilemma of specialization in these terms:

Specialization is both a product of and a contributor to the scientific information explosion in medicine. It subdivides both doctor and patient, increases the difficulty of attaining a clear sense of medical identity for students and young physicians, and places additional strain on the traditional doctor-patient relationship. Specialization . . . contributes to depersonalization, aggravates patient anxieties, and . . . is probably the

major factor disturbing traditional ethical and economic patterns in medicine, dominating medical education and research and medical practice, promoting jurisdictional disputes within the profession, and weakening organizational strength and professional power.¹³

The typical medical school today is a very different place from one in Osler's time. Graduate medical education has seen massive growth, and much of the day-to-day clinical teaching of medical students is now carried out by the house staff in most teaching hospitals. In many specialties the research-oriented medical scientist and subspecialist has replaced the clinician-scholar as the predominant faculty role model. The reward system in academic medicine, particularly appointment and promotion criteria, has placed higher value on research and publication than excellence in patient care and teaching. Practicing physicians have been largely excluded from medical teaching in most fields. Patient care on many clinical services is subspecialized and often managed by protocol. It is commonplace, for example, that a well-trained general internist on a full-time faculty has no formal role in the care of his/her patient with acute myocardial infarction in a university hospital in which coronary care is the prerogative of fellows in cardiology and subspecialists in that field.

Two recent observations of current medical education convey different aspects of today's problems. In a paper dealing with medical education and general medical care, McDermott had this to say:

Our schools have been constantly criticized for emphasizing personal care too little and technology too much. They have entered a consent divorce from the public health field and thus produced fine leaders of medical specialties, but very few of them are equipped to look at the profession as a whole. Above all, medical education has failed badly in teaching ambulatory care.¹⁴

DeGroot and Siegler¹⁵ criticize the preoccupation of the typical morning report with case review and the gamesmanship of literature recall instead of emphasizing critical inquiry, humaneness of care or even patient outcome. Their concern is that “intellectual inquiry in medical education is being replaced by a narrow view of training designed to produce technicians rather than medical scholars.”

Only in the past decade has reemphasis of the generalist role begun to emerge with the development of organized teaching programs in family medicine, general internal medicine and general pediatrics. These fields are beginning to address the larger issues related to medical care and to renew the emphasis of many of Osler's precepts. Their numbers and relative influence in the medical education establishment, however, are still comparatively small. Most departments of medicine, for example, have established divisions of general internal medicine, but full-time faculty in these divisions total only about 400 of the nearly 7,000 full-time faculty in internal medicine in US medical schools.¹⁶ Generalists in all of the primary care fields share similar problems in academic medicine, including heavy clinical and teaching loads, the organizational

and administrative challenges of developing new educational programs and the relative devaluation of their still-somewhat-limited research efforts by those in established specialties.

Where does all of this leave the Oslerian tradition today? Although one can make a good case that some of the *structure* of medical education that Osler helped to shape has survived in a viable way (for example, the undergraduate clinical clerkship), it seems quite apparent that the *process* and even *content* of the Oslerian tradition have become seriously attenuated. The argument can be offered that these changes are the inevitable result of health care and medical education based on highly technologic scientific medicine. The counterargument is that the Oslerian tradition—with its central concerns for both patients and students, emphasis on critical inquiry and clinical problem solving, active participation by clinician-scholar faculty and emphasis on the ideals of medicine—is timeless in its relevance and is at least as important today as it was nearly a century ago.

Some Positive Approaches

In the foregoing discussion I have proposed that the strengths of the Oslerian tradition should be preserved and promoted in medical education, if the public interest is to be served best, by developing the full potential of medicine. If one accepts this view, two further questions remain. One, are there fundamentally new needs in today's world that merit extension of Osler's precepts? Two, what realistic steps can be taken to revitalize the Oslerian tradition in America?

Several major changes stand out as important issues today that were not present in Osler's day:

- The spiraling cost of health care.
- Ethical dilemmas regarding the allocation of resources limited by cost.
- The threat of malpractice liability.
- More active involvement by patients in decisions relating to their own health care.

These changes call for some additions to the content and process of clinical teaching.

Based on the premise that rediscovery and reapplication of the Oslerian tradition are needed, the following constructive approaches are suggested, each of which should be achievable if actively supported by concerned medical educators and clinical teachers. Most of these points are drawn directly from Osler's work and views, whereas others relating to more recent issues represent speculative extensions of his published views in a different time.

- Renewing our commitment to the primacy of patients' welfare, the patient as person and family member and patients' needs as the ultimate reason for both clinical teaching and medical research.
- Shifting the value system and attitudes in academic medicine to reinforce the importance of skilled and humane medical care and excellence in clinical

teaching so that they have parity with research productivity.

- Increasing the visibility of the clinician-scholar role model among faculty in clinical departments so that others recognize the central role played by such faculty members in the mission of the department and of the medical school.

- Further developing the generalist role in medicine by supporting the commitment of primary care specialties—that is, family medicine, general internal medicine and general pediatrics—to comprehensiveness and continuity of personal health care.

- Increasing interaction and communication among the primary care specialties and consulting specialties, including sharing responsibilities for the care of complex and life-threatening illnesses.

- Increasing the representation of practicing physicians in clinical teaching as role models of various forms of clinical practice in the "real world."

- Expanding the concerns of clinical teaching to include, in appropriate circumstances, attention to some of the important issues of the day, such as:

1. Modeling of cost containment without compromising patients' welfare.

2. Discussion of ethical issues related to cost-benefit and patient outcomes of alternative clinical interventions.

3. Emphasizing appropriate procedures of informed consent and medical record-keeping.

4. Encouraging active participation by patients (and family, where indicated) in clinical decision-making based on an adult-adult, physician-patient interaction.

- Extending performance evaluation beyond cognitive factors to include noncognitive aspects of the performance of medical students, residents and faculty, particularly as they relate to interpersonal and communication skills and humaneness of care.

- Broadening the definition of research and scholarship beyond the traditional interpretation of "bench research" to include population-based research, health services research (including quality of care and cost-benefit studies), behavioral research, evaluation of clinical demonstration projects, clinical decision-making research and education research.

- Increasing the integration of research and scholarship related to patient care in clinical teaching settings, whether ambulatory or inpatient, including both the primary care and consulting specialties.

Many of the major issues in medicine today, such as the restructuring of medical practice to better meet the public interest in an era of limited resources, do not fit neatly into the domain of any of the established clinical specialties. Yet the active engagement and leadership by physicians in addressing these problems are vital to their resolution. There is therefore an urgent need for encouraging the generalist approach in

medicine; the Oslerian tradition has much to offer in the process of restoring an appropriate generalist-specialist balance.

REFERENCES

1. Knight JA: The relevance of Osler for today's humanity-oriented medical student. *In* McGovern JP, Burns CR (Eds): *Humanism in Medicine*. Springfield, Ill, Charles C Thomas, 1973, pp 90-98
2. Davison WC: The basis of Sir William Osler's influence on medicine. *Ann Allergy* 1969 Aug; 27:366-372
3. Regelson W: The weakening of the Oslerian tradition: The changing emphasis in Departments of Medicine. *JAMA* 1978 Jan 23; 239:317-319
4. Medical Schools of the United States 1906. Chicago, AMA Council on Medical Education, 1906, p 46
5. Kaufman M: American medical education. *In* Numbers RL (Ed): *The Education of American Physicians: Historical Essays*. Berkeley, University of California Press, 1980, pp 7-28
6. Harvey AM: William Osler and medicine in America: With special reference to the Baltimore period. *Md State Med J* 1976 Oct; 25:35-42
7. Bean WB (Ed): *Osler W: Aphorisms*. New York, Henry Schuman, 1950
8. Bean WB: Osler, the legend, the man, and the influence. *Can Med Assoc J* 1966 Nov 12; 95:1031-1037
9. Blogg MW: Bibliography of the writings of Sir William Osler. Baltimore, Md, The Lord Baltimore Press, 1921
10. Rodin AE: Humanistic medicine. William Osler and medical education. *Ohio State Med J* 1978 Oct; 74:647-649
11. Wescoe WC: Commentary. *In* McGovern JP, Roland CG (Eds): *William Osler: The Continuing Education*. Springfield, Ill, Charles C Thomas, 1969, p 78
12. Osler W: The treatment of disease. *In* McGovern JP, Roland CG (Eds): *William Osler: The Continuing Education*. Springfield, Ill, Charles C Thomas, 1969, pp 240-241
13. Menke WG: Divided labor: The doctor as specialist. *Ann Intern Med* 1970 Jun; 72:943-950
14. McDermott W: Education and general medical care. *Ann Intern Med* 1982 Apr; 96:512
15. DeGroot LJ, Siegler M: The morning-report syndrome and medical search. *N Engl J Med* 1979 Dec 6; 301:1285-1287
16. Tarlov AR, Weil PA, Schleiter MK: The Association of Professors of Medicine Task Force on Manpower—National study of internal medicine manpower: 1. Residency training 1976-1977. *Ann Intern Med* 1978; 88:413-420

Medical Practice Questions

EDITOR'S NOTE: From time to time medical practice questions from organizations with a legitimate interest in the information are referred to the Scientific Board by the Quality Care Review Commission of the California Medical Association. The opinions offered are based on training, experience and literature reviewed by specialists. These opinions are, however, informational only and should not be interpreted as directives, instructions or policy statements.

In Vitro Fertilization

QUESTION:

Is in vitro fertilization considered investigational or accepted medical practice?

OPINION:

In the opinion of the Scientific Advisory Panel on Obstetrics and Gynecology, in vitro fertilization can be considered accepted clinical practice under selected circumstances. The complexity of the procedure is such that it should be done only in large centers with rigid laboratory control by physicians expert in the technique. The number of such centers at present is limited.

As the technique and the indications for its use are not yet standardized, in vitro fertilization is not approved for use by all practitioners. Because advances in the field of in vitro fertilization are rapid, this question merits review in the near future.